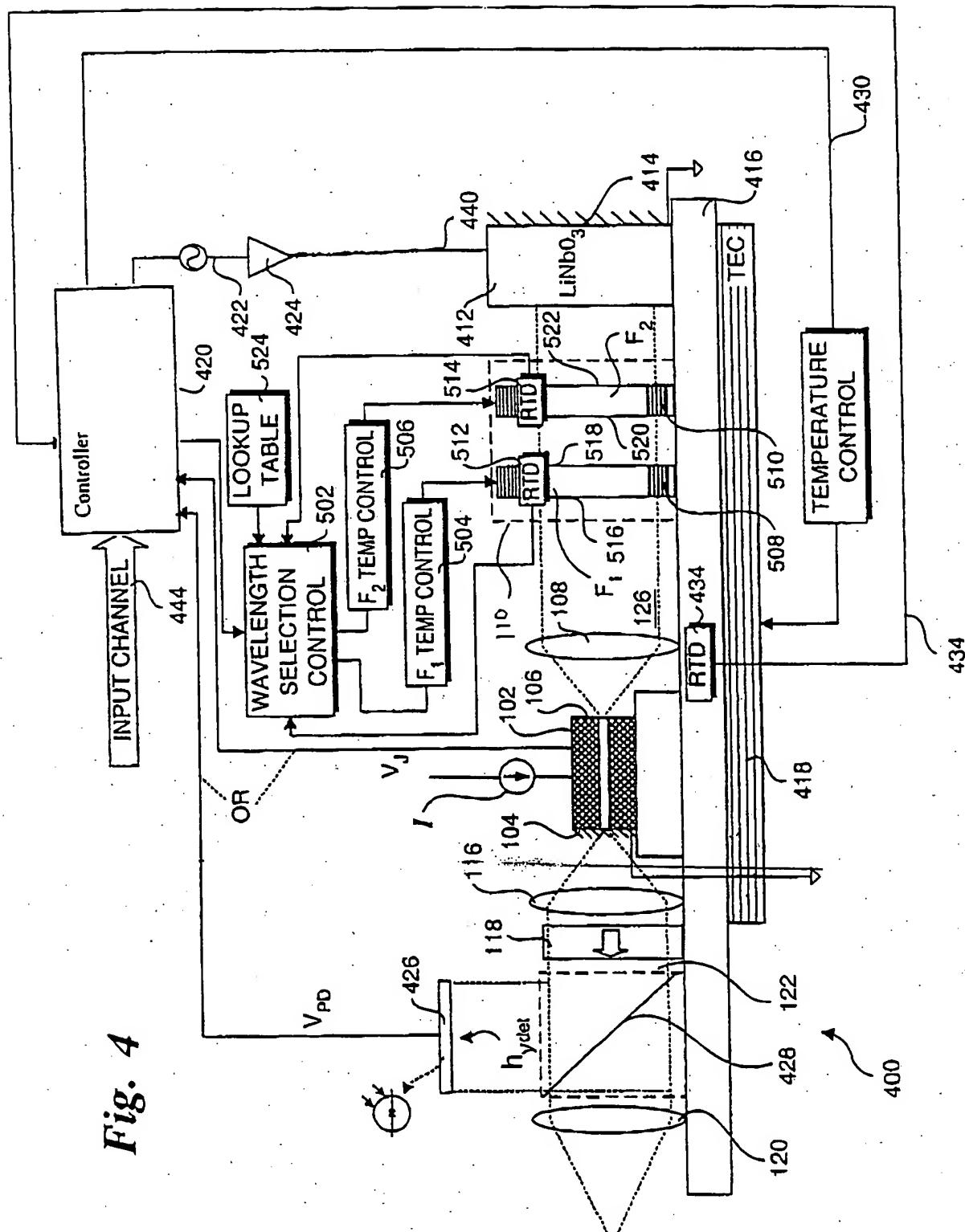


Fig. 3

Fig. 4

The diagram illustrates a laser system 400 and its associated temperature control system 430. The laser system 400 includes an input channel 444 that feeds into a Controller. The Controller is connected to a Wavelength Selection Control 502 and two temperature control blocks, F₁ TEMP CONTROL 504 and F₂ TEMP CONTROL 506. These blocks are connected to a LOOKUP TABLE 524, which in turn provides feedback to the Controller via a signal 420. The optical path of the laser system includes a series of lenses (102, 106, 110, 116, 118, 120) and a beam splitter 104. A gain medium 108 is positioned between lenses 106 and 110. The output of the laser system is coupled to a fiber 122. The temperature control system 430 includes a TEC 416, RTDs 412, 414, 418, and 420, and a controller 434. The system is powered by a current source I and a voltage source V_j. The output of the laser system is coupled to a fiber 122.



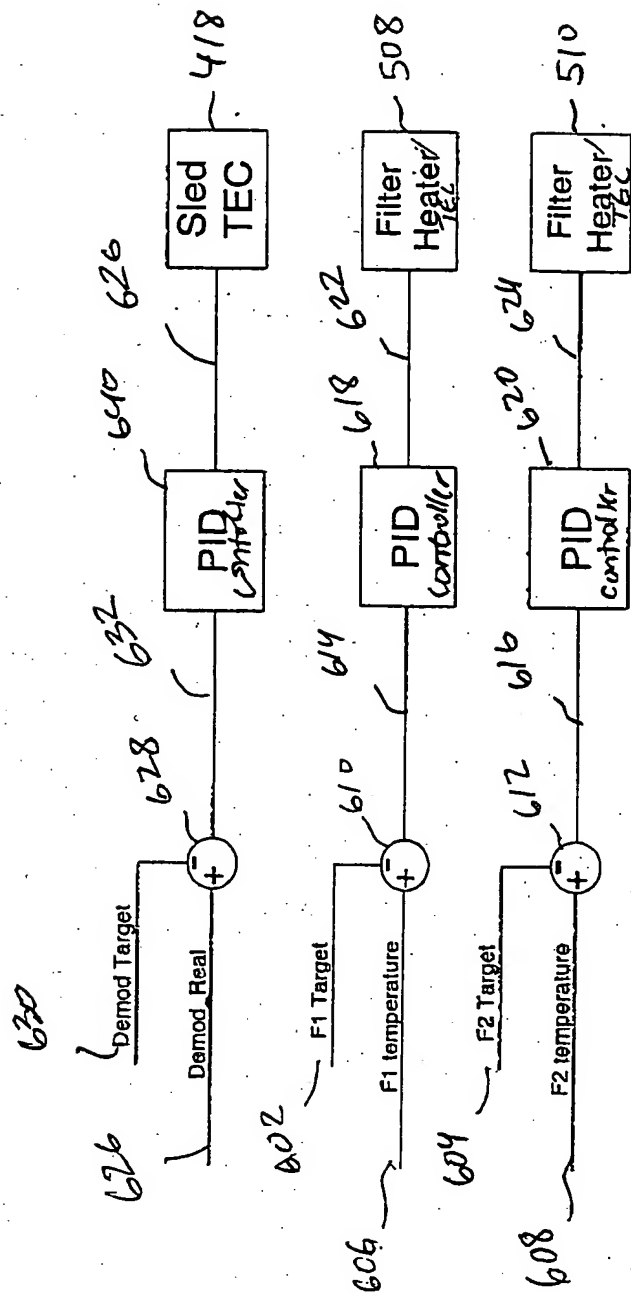


FIG. 5

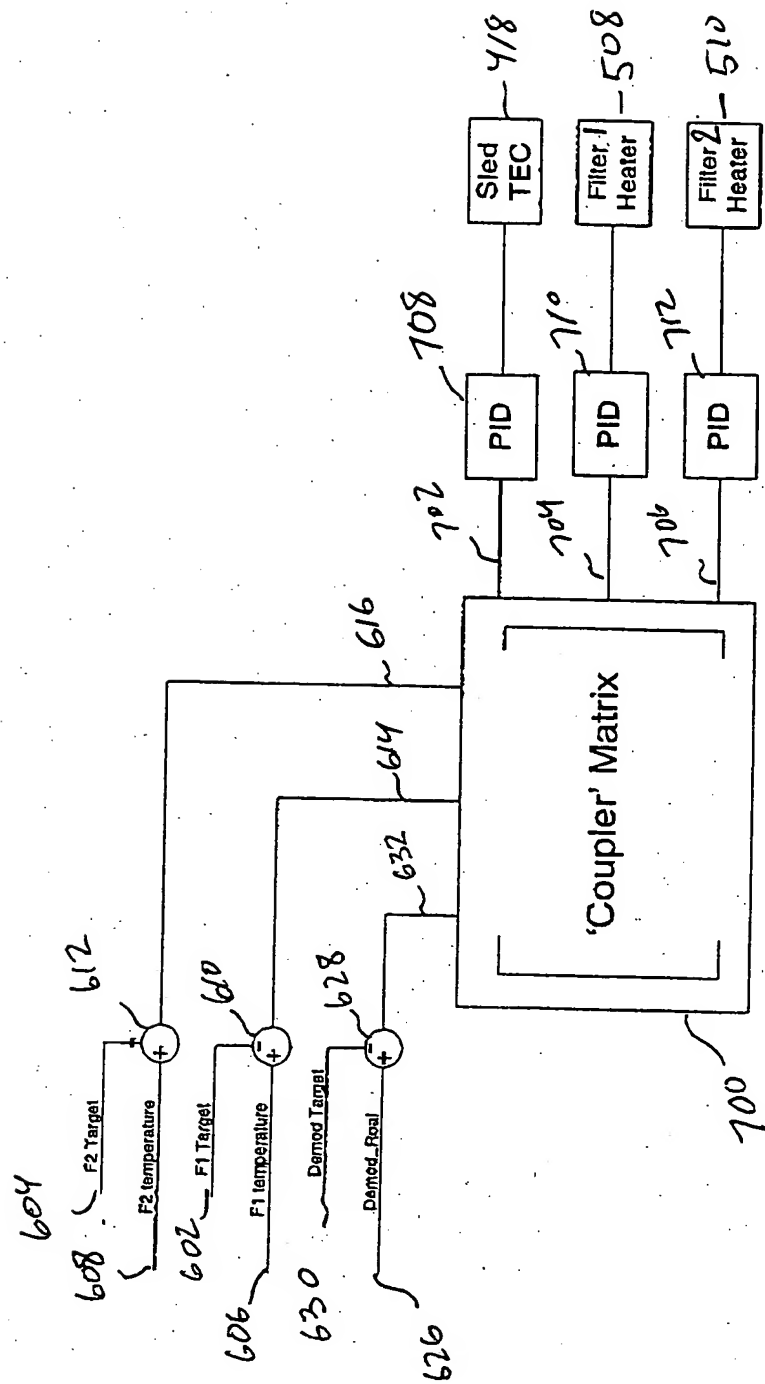


FIG. 6

$$\begin{array}{l}
 702 \\
 704 \\
 706
 \end{array}
 \begin{bmatrix}
 \text{Sled_PID_input} \\
 \text{F1_PID_input} \\
 \text{F2_PID_input}
 \end{bmatrix}
 \stackrel{900}{=}
 \begin{bmatrix}
 1 & 0 & 0 \\
 0 & 1 & 0 \\
 0 & 0 & 1
 \end{bmatrix}
 \stackrel{700_1}{*}
 \begin{bmatrix}
 \text{Demod_real} \\
 \text{Filt1_error} \\
 \text{Filt2_error}
 \end{bmatrix}
 \stackrel{800}{\begin{array}{l}
 632 \\
 614 \\
 616
 \end{array}}$$

FIG. 7A

$$\begin{array}{l}
 702 \\
 704 \\
 706
 \end{array}
 \begin{bmatrix}
 \text{Sled_PID_input} \\
 \text{F1_PID_input} \\
 \text{F2_PID_input}
 \end{bmatrix}
 \stackrel{900}{=}
 \begin{bmatrix}
 0 & 0 & 0 \\
 K1 & 1 & -1 \\
 K1 & -1 & 1
 \end{bmatrix}
 \stackrel{700_2}{*}
 \begin{bmatrix}
 \text{Demod_real} \\
 \text{Filt1_error} \\
 \text{Filt2_error}
 \end{bmatrix}
 \stackrel{800}{\begin{array}{l}
 632 \\
 614 \\
 616
 \end{array}}$$

FIG. 7B

$$\begin{array}{l}
 702 \\
 704 \\
 706
 \end{array}
 \begin{bmatrix}
 \text{Sled_PID_input} \\
 \text{F1_PID_input} \\
 \text{F2_PID_input}
 \end{bmatrix}
 \stackrel{900}{=}
 \begin{bmatrix}
 0 & K2 & K2 \\
 K1 & 1 & -1 \\
 K1 & -1 & 1
 \end{bmatrix}
 \stackrel{700_3}{*}
 \begin{bmatrix}
 \text{Demod_real} \\
 \text{Filt1_error} \\
 \text{Filt2_error}
 \end{bmatrix}
 \stackrel{800}{\begin{array}{l}
 632 \\
 614 \\
 616
 \end{array}}$$

FIG. 7C